

# PATENT COOPERATION TREATY

# PCT

## INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

(Chapter I of the Patent Cooperation Treaty)

(PCT Rule 44bis)

Applicant's or agent's file reference <b>OPP040027KR</b>	<b>FOR FURTHER ACTION</b>	See item 4 below
International application No. <b>PCT/KR2004/002730</b>	International filing date ( <i>day/month/year</i> ) <b>27 October 2004 (27.10.2004)</b>	Priority date ( <i>day/month/year</i> ) <b>26 December 2003 (26.12.2003)</b>
International Patent Classification (8th edition unless older edition indicated) See relevant information in Form PCT/ISA/237		
Applicant <b>ELECTRONICS AND TELECOMMUNICATIONS RESEARCH INSTITUTE</b>		

1. This international preliminary report on patentability (Chapter I) is issued by the International Bureau on behalf of the International Searching Authority under Rule 44 bis.1(a).
  2. This REPORT consists of a total of 3 sheets, including this cover sheet.
- In the attached sheets, any reference to the written opinion of the International Searching Authority should be read as a reference to the international preliminary report on patentability (Chapter I) instead.

3. This report contains indications relating to the following items:
 

<input checked="" type="checkbox"/> Box No. I	Basis of the report
<input type="checkbox"/> Box No. II	Priority
<input type="checkbox"/> Box No. III	Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
<input type="checkbox"/> Box No. IV	Lack of unity of invention
<input checked="" type="checkbox"/> Box No. V	Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
<input type="checkbox"/> Box No. VI	Certain documents cited
<input type="checkbox"/> Box No. VII	Certain defects in the international application
<input type="checkbox"/> Box No. VIII	Certain observations on the international application
4. The International Bureau will communicate this report to designated Offices in accordance with Rules 44bis.3(c) and 93bis.1 but not, except where the applicant makes an express request under Article 23(2), before the expiration of 30 months from the priority date (Rule 44bis .2).

The International Bureau of WIPO 34, chemin des Colombettes 1211 Geneva 20, Switzerland	Date of issuance of this report <b>31 July 2006 (31.07.2006)</b>
Facsimile No. +41 22 338 82 70	Authorized officer <div style="text-align: center; font-weight: bold; font-size: 1.2em;">Philippe Becamel</div> e-mail: pt12@wipo.int

## PATENT COOPERATION TREATY

To:

YOU ME PATENT AND LAW FIRM  
Seolim Bldg., 649-10,  
Yoksam-dong, Kangnam-ku,  
Seoul 135-080  
Republic of Korea

PCT

WRITTEN OPINION OF THE  
INTERNATIONAL SEARCHING AUTHORITY

(PCT Rule 43bis.1)

Date of mailing 12 July 2006 (12.07.2006)  
(day/month/year)

Applicant's or agent's file reference  
OPP040027KR

FOR FURTHER ACTION  
See paragraph 2 below

International application No.  
PCT/KR 2004/002730

International filing date (day/month/year)  
27 October 2004 (27.10.2004)

Priority Date (day/month/year)  
26 December 2003 (26.12.2003)

International Patent Classification (IPC) or both national classification and IPC  
**H04J 11/00 (2006.01)**

Applicant

ELECTRONICS AND TELECOMMUNICATIONS RESEARCH INSTITUTE

## 1. This opinion contains indications relating to the following items:

- ☒ Cont. No. I Basis of the opinion  
☐ Cont. No. II Priority  
☐ Cont. No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability  
☐ Cont. No. IV Lack of unity of invention  
☒ Cont. No. V Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement  
☐ Cont. No. VI Certain documents cited  
☐ Cont. No. VII Certain defects in the international application  
☐ Cont. No. VIII Certain observations on the international application

## 2. FURTHER ACTION

If a demand for international preliminary examination is made, this opinion will be considered to be a written opinion of the International Preliminary Examining Authority ("IPEA") except that this does not apply where the applicant chooses an Authority other than this one to be the IPEA and the chosen IPEA has notified the International Bureau under Rule 66.1bis(b) that written opinions of this International Searching Authority will not be so considered.

If this opinion is, as provided above, considered to be a written opinion of the IPEA, the applicant is invited to submit to the IPEA a written reply together, where appropriate, with amendments, before the expiration of 3 months from the date of mailing of Form PCT/ISA/220 or before the expiration of 22 months from the priority date, whichever expires later.

For further options, see Form PCT/ISA/220.

## 3. For further details, see notes to Form PCT/ISA/220.

Name and mailing address of the ISA/ AT  
**Austrian Patent Office**  
Dresdner Straße 87, A-1200 Vienna

Facsimile No. +43 / 1 / 534 24 / 535

Authorized officer

ZUGAREK G.

Telephone No. +43 / 1 / 534 24 / 383

**WRITTEN OPINION OF THE  
INTERNATIONAL SEARCHING AUTHORITY****International application No.  
PCT/KR 2004/002730****Continuation No. I****Basis of the opinion**

1. With regard to the **language**, this opinion has been established on the basis of the international application in the language in which it was filed.

**Continuation No. V****Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement****1. Statement**

Novelty (N)	Claims 1-23	YES
	Claims ----	NO
Inventive step (IS)	Claims 1-23	YES
	Claims ----	NO
Industrial applicability (IA)	Claims 1-23	YES
	Claims ---	NO

**2. Citations and explanations:**

The documents cited in the search report merely refer to the state of the art in the field of frame synchronisation in OFDM based wireless communication systems.

None of said documents discloses a method for constructing an efficient preamble structure in which the preamble is constructed such, that the same pattern is repeated in the time-domain by the number of times decided based on a frame structure, to thereby design the frame structure unrestrictedly and minimize waste of time and frequency resources.

Thus the subject matter of independent claims 1 and 15 meets the requirements of novelty and inventive step.

The subject matter of the dependent claims can be considered novel and inventive by virtue of dependency.

Industrial applicability is obviously given.

## INTERNATIONAL SEARCH REPORT

International application No.  
PCT/KR 2004/002730

## A. CLASSIFICATION OF SUBJECT MATTER

IPC<sup>8</sup>: H04J 11/00 (2006.01)

According to International Patent Classification (IPC) or to both national classification and IPC

## B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC<sup>8</sup>: H04J 11/00

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)  
WPI, EPODOC, PAJ, DEPATIS, ESPACE

## C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	US 2002/0075797 A1 (MEHDI TAVASSOLI KILANI) 20 June 2002 (20.06.2002) <i>the whole document</i>	1-23
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A	WO 2000/008908 A2 (SAMSUNG ELECTRONICS CO.,LTD.) 24 February 2000 (24.02.2000) <i>description</i>	1-23
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☐ Further documents are listed in the continuation of Box C.☒ See patent family annex.

\* Special categories of cited documents:

"A" document defining the general state of the art which is not considered to be of particular relevance

"B" earlier application or patent but published on or after the international filing date

"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)

"O" document referring to an oral disclosure, use, exhibition or other means

"P" document published prior to the international filing date but later than the priority date claimed

"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art

"&amp;" document member of the same patent family

Date of the actual completion of the international search  
30 June 2006 (30.06.2006)Date of mailing of the international search report  
12 July 2006 (12.07.2006)Name and mailing address of the ISA/ AT  
**Austrian Patent Office**  
Dresdner Straße 87, A-1200 ViennaAuthorized officer  
ZUGAREK G.

Facsimile No. +43 / 1 / 534 24 / 535

Telephone No. +43 / 1 / 534 24 / 383

# INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No.

PCT/KR 2004/002730

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
US A 20020075797		none	